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SYSTEM 286/380
DISK CONFIGURATION
GUIDE

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Order Number: 134594-001

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Integrated Systems Operation—South
Intel Corporation
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and the combination of ICE, iCS, iRMX, iSBC, iSBX, or MCS and a numerical suffix.

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Since the System 286/380 is configurable, the user needs to know how to remove and replace the disk drives. This guide provides the information and procedures required to configure, install and remove the 8-inch flexible diskette drive and the 8-inch Winchester-technology hard disk drive.

The Chapters at a Glance

- Chapter 1—Disk Drive Overview: provides an overview of the disk drive configurations; also describes certain components and jumper patterns for the controllers and the drives.

- Chapter 2—Installing Additional Drives: provides instructions for configuring, installing and removing 8-inch drives. Lists installation, configuration and removal procedures.

- Appendix A—Eight-Inch Flexible Diskette Drive Specifications.

- Appendix B—iSBX 218A Flexible Diskette Controller Specifications.

- Appendix C—Eight-Inch Winchester Drive Specifications.

- Appendix D—iSBC 215G Winchester Disk Controller Specifications.

- Appendix E—Related Publications: contains a list of publications applicable to the System 286/380.

United States customers may obtain service and repair assistance by contacting the Intel Product Service Center in Phoenix, Arizona. Customers outside the United States should contact their sales source (Intel Sales Office or Authorized Distributor) for service information.

Before calling the Product Service Center you should have the following information:

- The date you received the product.

- The complete part number (including the dash number) of the product. This number is usually silk-screened onto printed circuit boards and stamped on the label of other products.

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- Your shipping and billing addresses.

- A purchase order number for billing purposes if your Intel product warranty has expired.

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Use the following telephone numbers to contact the Intel Product Service Marketing Administration group:

Regional Telephone Numbers		TWX Numbers
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If you are returning a product because of damage sustained during shipment or if the product is out of warranty, a purchase order is required before Intel can initiate repair.

Use the original factory packaging material when preparing a product for shipment to a repair center. If the original material is not available, ensure that the product is adequately protected by wrapping it in cushioning material before enclosing it in a heavy-duty shipping container. All containers should be labeled "FRAGILE" to advise careful handling. If a printed circuit board is being returned, a material such as Air Cap TH-240, (manufactured by the Sealed Air Corporation, Hawthorn, New Jersey) should be used to provide adequate cushioning.

Address and ship only to the mailing address specified by Intel Product Service Marketing Administration personnel.

WARNING

Risk of electrical shock may be present on exposed metal parts unless this product is adequately grounded in accordance with the following guidelines:

A. An insulated grounding conductor that is identical in size, insulation material, and thickness to the grounded and ungrounded branch-circuit supply conductors except that it is green with or without one or more yellow stripes is to be installed as part of the branch circuit that supplies the unit or system.

B. The grounding conductor mentioned in item A is to be grounded to earth at the service equipment or other acceptable building earth ground such as the building frame in the case of a high-rise steel-frame structure.

C. The attachment-plug receptacles in the vicinity of the unit or system are all to be of a grounding type, and the grounding conductors serving these receptacles are to be connected to earth ground at the service equipment or other acceptable building earth ground, such as the building frame in the case of a high-rise steel-frame structure.

CAUTION

Any external cable used with the system should be ESD hardened to maintain the ESD integrity of the system. It is the customer's responsibility to provide those cables.

Contents

Tables

Figures

1.1 Introduction

The System 286/380 has been designed to be used with 8-inch diskette drives and 8-inch Winchester disk drives. The base configuration hardware contains a dual-head diskette drive and a 35 MByte Winchester drive. Users can expand their systems by installing another diskette drive or Winchester drive in the Peripheral chassis; an optional 70 MByte Winchester drive is available as a replacement for the 35MByte Winchester drive. Refer to the *System 286/380 Hardware Maintenance Manual*, Order No. 134595, for removal-replacement procedures. (When removing any boards from a cardcage, it is good practice to attach temporary labels to the cables and their corresponding board connectors for ease of re-installation.)

Winchester drives interface to an iSBC 215G Winchester Disk Controller Board. Diskette drives interface to an iSBX 218A Flexible Diskette Controller Multimodule that is mounted on the iSBC 215G Board. Table 1-1 lists some format characteristics of diskettes and disks used in the System 286/380; for further specifications, see Appendices A and C in this guide.

Table 1-1. Diskette/Disk Formats

	Floppy SS/DD	Diskette DD/DD	Winchester Disk
Sector Size	128 bytes	128 bytes	1024 bytes
Max. Capacity	0.5Mbytes	1.0Mbytes	35MB (70MB*) (unformatted)
Track Density	48 TPI	48 TPI·	480 (960*) TPI
Tracks/Surface	77	77	525 (1049*)

* Optional 70 MB Winchester Drive

1.2 Diskette Drives

The iSBX 218A reads and writes data, in MFM (Modified Frequency Modulation) mode, to soft-sectored, double-sided, double-density (DS/DD) diskettes. Refer to Appendix A for diskette drive specifications and Appendix B for iSBX 218A specifications.

1.2.1 Diskette Drive Select Function

A computer must have a way of uniquely identifying (addressing) each device in its system. This can be accomplished by assigning a different address to each device. In the System 286/380, the address of each diskette drive is selected via one pair of a block of jumpers on each individual drive's PC board. The jumper block pairs are labeled DS1, DS2, DS3, and DS4 (Drive Select), as shown in Figure 1-1. The board is attached to the bottom of the drive unit.

DRIVE SELECT JUMPERS

RESISTIVE TERMINATOR IC
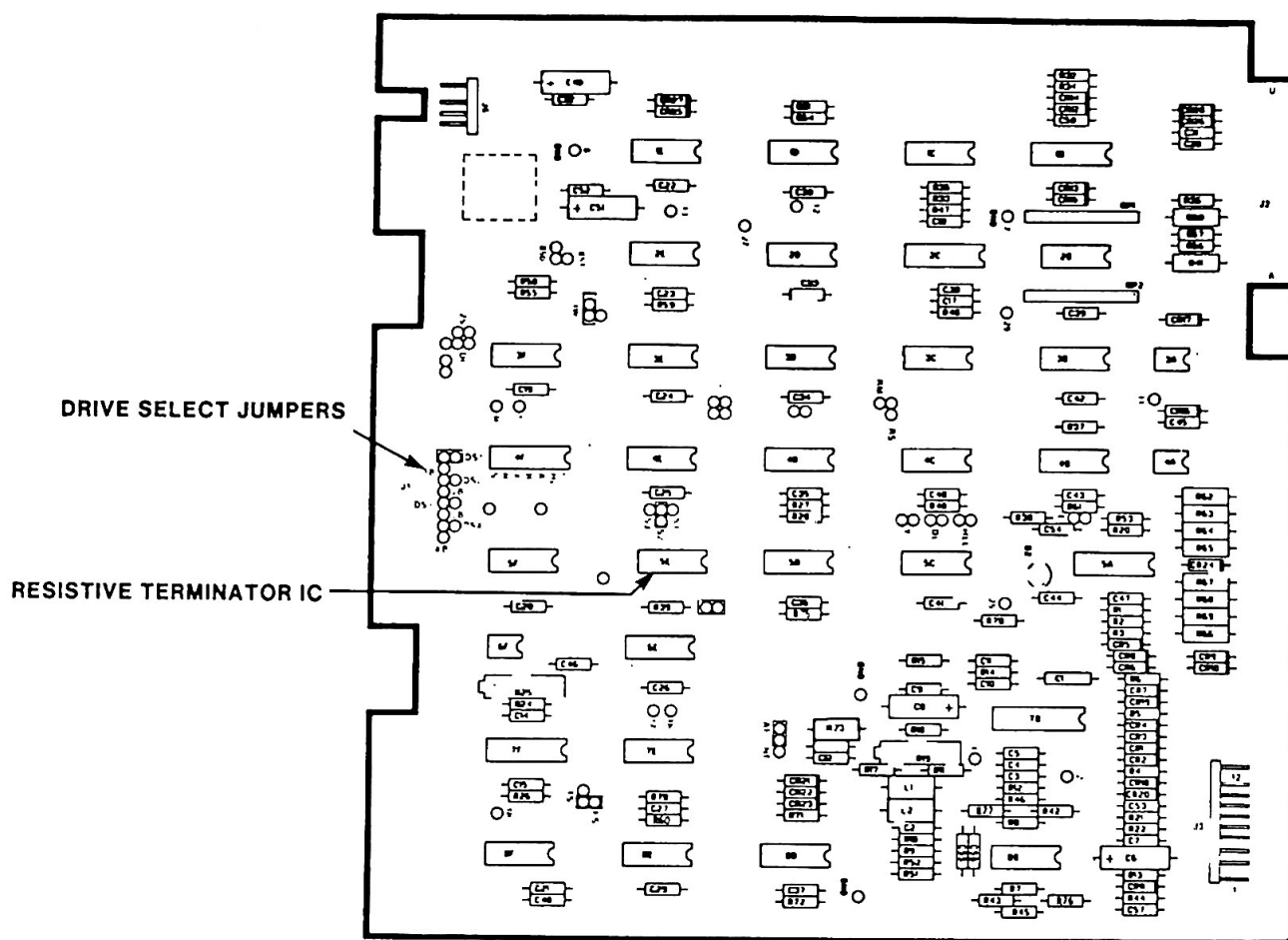
Figure 1-1. Select and Terminator Locations on Diskette Drives

Only one DS jumper pair should be installed in any given drive. In a single drive configuration, choose DS1, DS2, DS3 or DS4. In a multiple drive configuration, assign one drive as DS1, another as DS2, and so-on. Don't assign the same address to two or more different drives, and don't assign multiple addresses to a single drive, by leaving the other three jumpers installed!

1.2.2 Diskette Drive Resistive Termination

A System 286/380 with a single diskette drive has a resistive terminator IC (150 Ohm line terminations) installed in location 5E of the drive circuit board (see Figure 1-1). If the user installs additional diskette drives (daisy-chained into the system), the terminator ICs, in all drives except the last drive in the series, must be removed. Refer to Intel's *Eight-Inch Floppy Disk Drive Service Manual,* Order No. 133184, for drive terminator and installable options information.

1.2.3 iSBX 218A Flexible Disk Controller Board

The iSBX 218A Flexible Disk Controller is a MULTIMODULE board mounted on the iSBC 215G Winchester Disk Controller, as shown in Figure 1-2. Although the iSBX 218A can support four diskette drives, there is only room for one more drive (diskette or Winchester) in the Peripheral chassis. To expand beyond one additional drive, the user must provide a suitable chassis, with adequate power sources. The daisy-chain signal-control cabling is also the user's responsibility. Refer to Intel's *iSBX 218A Flexible Disk Controller Hardware Reference Manual,* Order No. 121583, for cabling and programming information.

In the factory-configured System 286/380, the iSBX 218A jumpers are patterned as shown in Figure 1-3.

1.3 Winchester Disk Drives

The Winchester drive in the System 286/380 is a 35 Mbyte (unformatted capacity), 8-inch hard-disk unit installed in the center bay of the Peripheral Chassis. The formatted capacity (i.e., the storage available for user applications) is determined by the operating system installed. The Winchester drive interfaces to the iSBC 215G Winchester Disk Controller Board via a Pin Adapter (scrambler) Board (both of these boards are in the Processor Chassis).

The iSBC 215G reads and writes data to the Winchester drive in MFM (Modified Frequency Modulation) mode. Refer to Appendix C for Winchester drive specifications and Appendix D for iSBC 215G specifications.
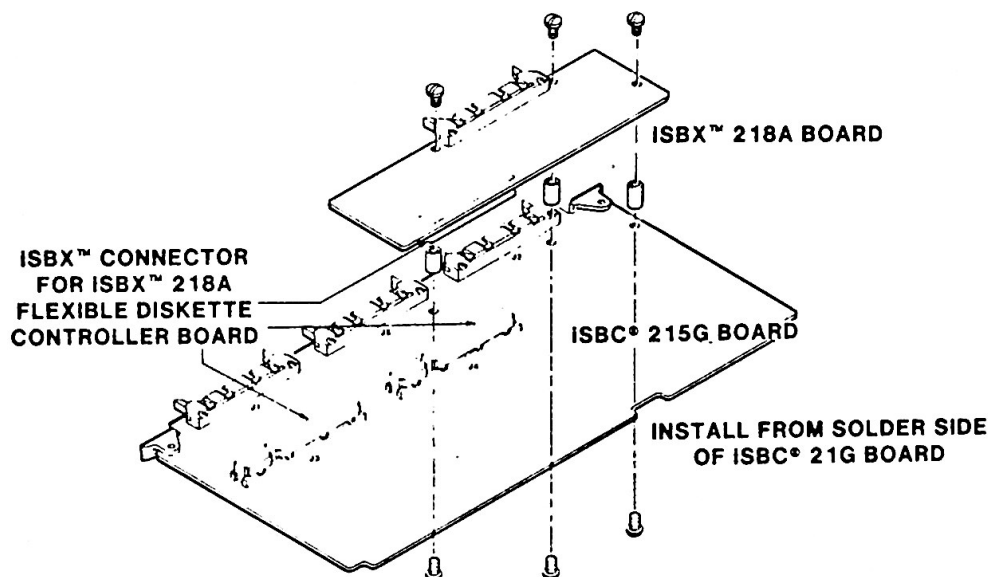

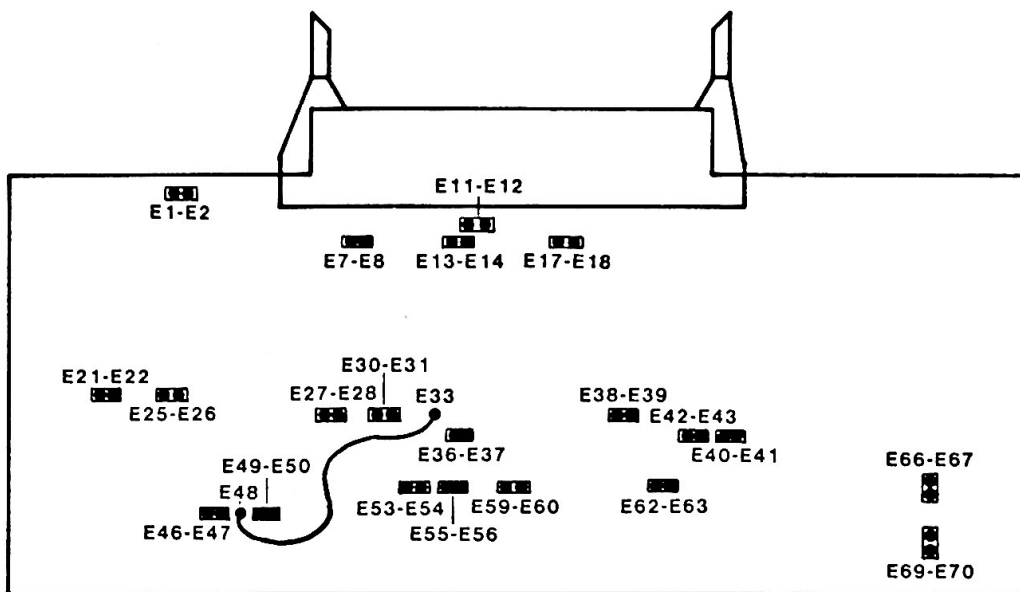Figure 1-2. iSBX 218A Installation on the iSBC 215G

Figure 1-3. iSBX 218A Jumper Patterns for System 286/380

1.3.1 Winchester Drive Select Function

Like the diskette drives, Winchester drives require a drive select (addressing) mechanism and resistive termination to certain signal lines on the last daisy-chained (or only) unit in a configuration.

The 35 Mbyte Winchester drive installed in the System 286/380 Peripheral Chassis is either a "manual headlock" type or an "auto headlock" type. If a manual headlock type is installed, its read/write PC board will have part number 200233-(01 thru 20) stamped on it; if the drive is an auto headlock type, the board will have 200233-(21 & up) stamped on it. These boards have DIP switches for drive selection and configuration options. These switches, and a resistive terminator IC, are situated at locations 6K-5H and J4, respectively, on an -01 thru 20 board and 6J-5L and J4, on a -21 & up board, as indicated in Figure 1-4. The functions and default settings (for the System 286/380) of the switches are listed in Table 1-2. The "Write Clock" switch must be ON for an -01 thru 20 board and OFF for a -21 & up board, otherwise, the patterns are the same. The jumper patterns are different, too, and are also indicated in Table 1-2.
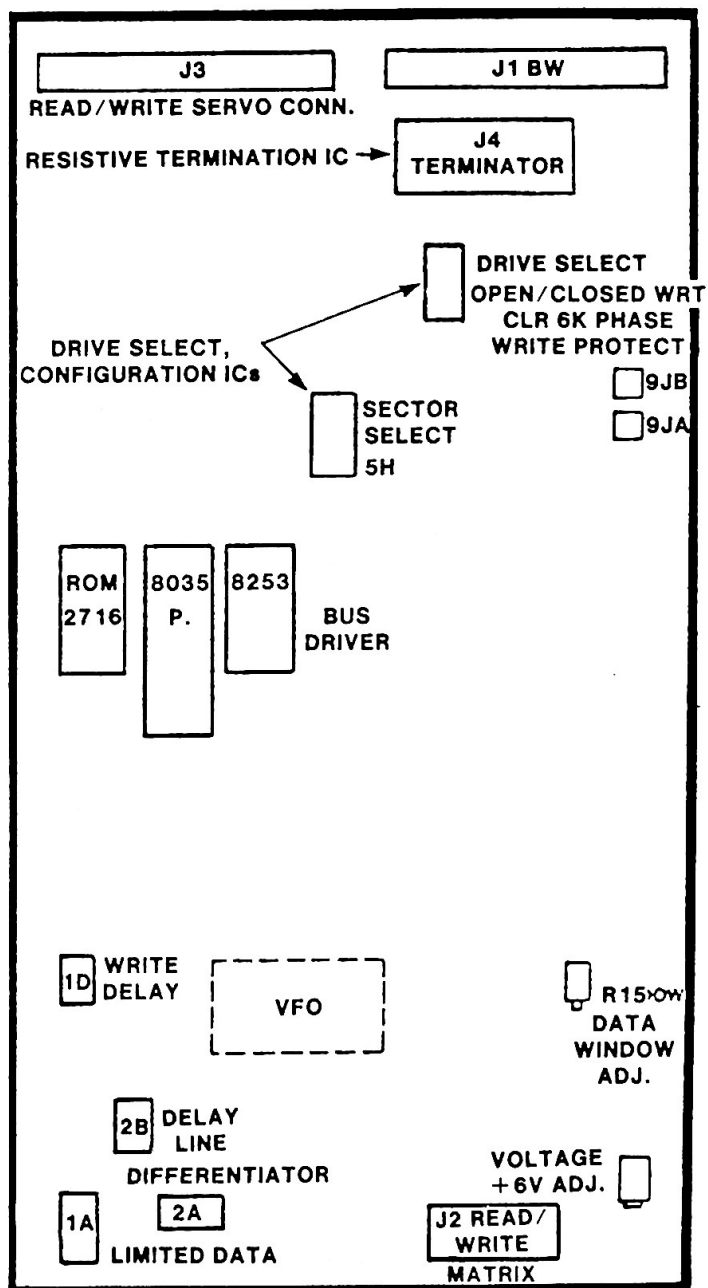
Figure 1-4. Winchester Read/Write PCB IC Locations

Table 1-2. Switch Settings on the Winchester Read/Write PCB

Switch Number	Switch PCB Location/Function/(Setting)	
	Location 6K(-01)/5L(-21)	Location 5H(-01)/6J(-21)
1	Drive Select 1 (ON)	1 sector/track 16 bytes/sector (OFF)
2	Drive Select 2 (OFF)	2 sectors/track 32 bytes/sector (OFF)
3	Drive Select 3 (OFF)	4 sectors/track 64 bytes/sector (ON)
4	Drive Select 4 (OFF)	8 sectors/track 128 bytes/sector (ON)
5	Reserved (OFF)	16 sectors/track 256 bytes/sector (OFF)
6	Reserved (OFF)	32 sectors/track 512 bytes/sector (OFF)
7	Write Clock (ON)(-01) (OFF)(-21)	64 sectors/track 1024 bytes/sector (OFF)
8	Write Enable (ON)	(OFF) = sectors/track (ON = bytes/sector)

-01 thru 20 Jumpers:

   Remove the jumper between W1 and the blank terminal.
   Install the jumper between W2 and the blank terminal.
   (W1 & W2 are near IC H6).

-21 & up Jumpers, verify the following configuration:

Jumper	Location	Configuration
W1	A6	IN
W2	H7	IN
W3	J5	B-C
W4	K3	IN
W5	L9	IN
W6	H2	A-B
W7	L5	IN

1.3.2 Winchester Drive Resistive Termination

A System 286/380 with a single Winchester disk drive has a resistive terminator IC installed in J4 on the Read/Write PC board (see Figure 1-4). If, at the user's option, additional Winchester drives are to be installed (daisy-chained) into the system, remove the terminator ICs from all drives except the last one in the series. Refer to Intel's *Eight-Inch Winchester Disk Drive Service Manual,* Order No. 121916, for drive terminator and installable options information.

1.3.3 iSBC 215G Winchester Disk Controller Board

The iSBC 215G Winchester Disk Controller Board can support up to four Winchester drives; however, the Peripheral Chassis only has room for one more drive (diskette or Winchester). To expand to the maximum number of drives (diskette or Winchester or both), the user must provide a separate chassis, equipped with suitable power sources; fabrication and routing of the daisy-chain signal-control cabling is also the user's responsibility. The iSBC 215G Controller Board also contains two iSBX connectors that allow it to serve as host for two MULTI-MODULE expansion boards. Refer to Intel's *iSBC 215 Generic Winchester Disk*

Controller Reference Manual, Order No. 144780, for cabling and programming information.

The iSBC 215G jumpers must be patterned as shown in Figure 1-5. Since many of the jumpers are underneath the iSBX 218A board, it may be easier to verify the iSBC 215G jumper patterns by removing the iSBX 218A. See Figure 1-2 for the iSBX 218A mounting screws. Refer to Table 1-3 for the jumper configuration.

Table 1-3. iSBC 215G Jumper Configuration for System 286/380

W1-1 W1-2	W14-1 W14-3	W26-1 W26-2
W2-1 W2-2	W15-1 W15-2	W27-1 W27-2
W3-1 W3-2	W16-1 W16-3	W28-1 W28-2
W4-1 W4-2	W18-1 W18-2	W29-8 W29-9
W5-1 W5-2	W19-C W19-5	W30-1 W30-20
W6-1 W6-2	W20-1 W20-2	W30-2 W30-19
W7-1 W7-2	W21-1 W21-3	W33-1 W33-3
W8-1 W8-2	W22-1 W22-2	W34-1 W34-2
W10-1 W10-2	W23-1 W23-2	W35-1 W35-2
W11-1 W11-3	W24-1 W24-1	W37-1 W37-2
W13-1 W13-3	W25-1 W25-2	W38-1 W38-2
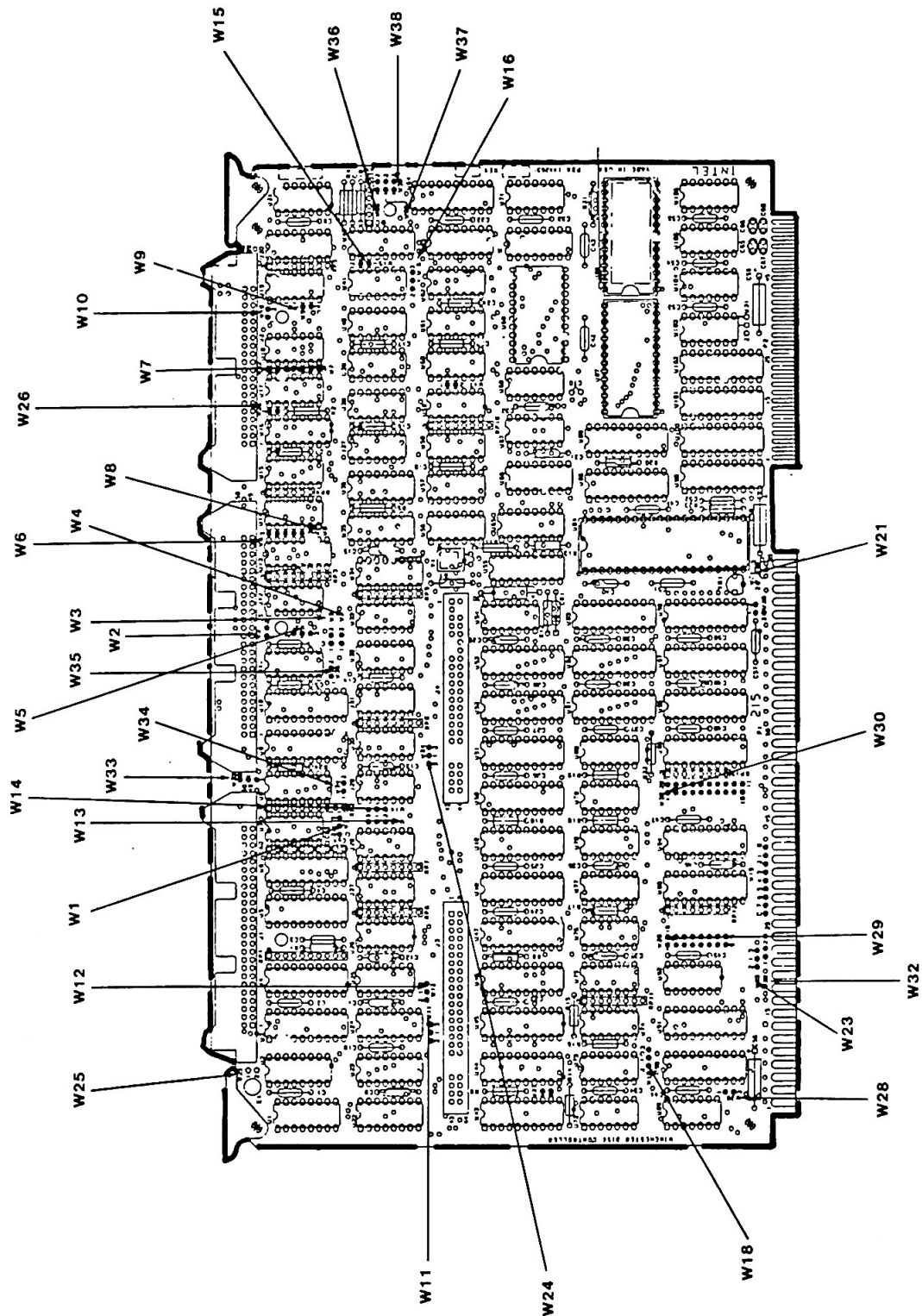
Figure 1-5. iSBC 215G Jumper Pattern for the System 286/380

2.1 Introduction

The System 286/380 allows the user to install one additional diskette or Winchester drive in the left-most bay (when viewed from the front) of the Peripheral Chassis. The installation involves removing a filler panel from the front of the chassis, installing the drive, connecting power/signal cables and replacing the front filler panel. A procedure is described in the following text.

NOTE

Removal/replacement of all sub-assemblies is detailed in the *System 286/380 Hardware Maintenance Manual,* Order No. 134595; refer to that document for explicit steps.

When installing a second Winchester drive in the System 286/380 Peripheral chassis, the maximum operating temperature of Priam Winchester drives may be exceeded if the ambient temperature exceeds 30° C.

It is the customer's responsibility to maintain the ambient temperature below 30° C when two Priam Winchester drives are installed in the Peripheral chassis of a System 286/380.

WARNING

Potentially hazardous voltages are present within a chassis whenever an AC power cord is connected to a power source. Do not attempt to service any subassembly within a chassis if AC power is applied to that chassis.

The location of the resistive terminator IC (or, on some drive models, a board containing resistive IC packs) is important. The signal cable that 'daisy-chains' drives together is, in essence, a set of transmission lines. These transmission lines must be terminated in their characteristic impedance (nominally 150 Ohms). Whenever a drive is added to the system, the terminators must be moved to the drive that is electrically farthest from the transmission line sources (the drive controller boards).

2.2 Adding Winchester Drives

1. Turn the AC power switch on the Peripheral Chassis to OFF.

2. Disconnect the AC power cord on the Peripheral Chassis from the power source.

3. Remove the top cover from the Peripheral Chassis.

4. Remove the front panel from the front of the chassis.

5. Remove the filler panels from the front of the chassis.

6. If so equipped, LOCK the shipping restraint on the existing Winchester drive and ensure that the heads are still locked on the additional Winchester drive. See Figure 2-1.
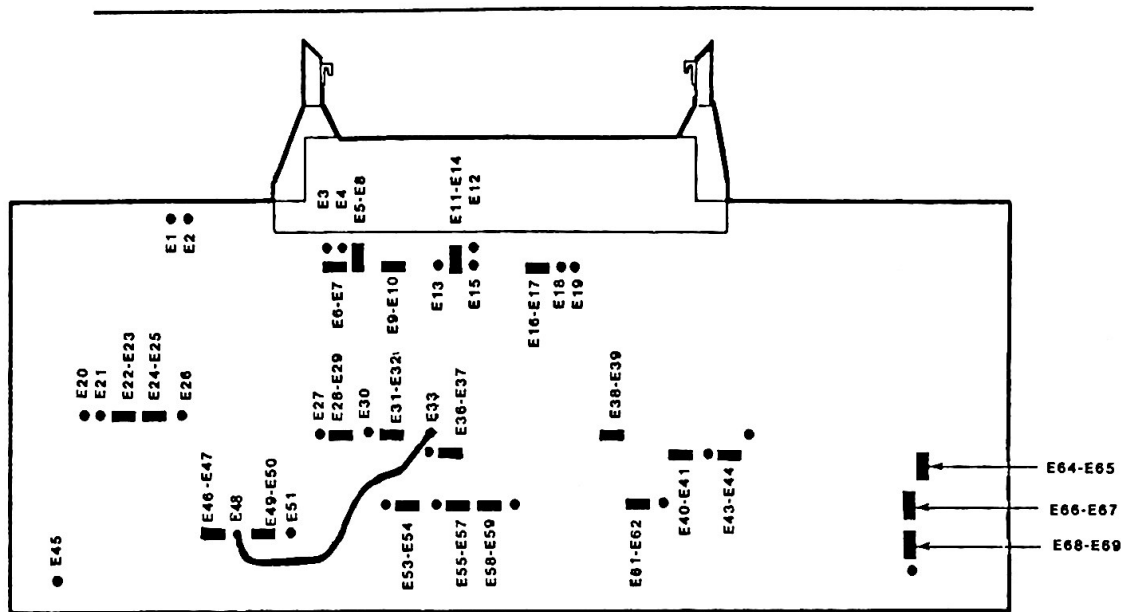
Figure 2-1. Winchester Drive (Priam) Partial View

7. Remove the three retaining screws securing the Winchester drive to the chassis. Slide the existing Winchester drive forward until the daisy chain cable connector (J1) on the drive is accessible; then do the following:

   • First, disconnect the signal cable from J1 at the front of the existing Winchester drive (refer to Figure 2-1 for location of J1 on a PRIAM Winchester drive).

   • Slide the drive forward approximately 5 inches to gain some working room behind the existing drive.

8. Remove the empty drive mounting plate from inside the chassis and install it onto the bottom of the additional Winchester drive.

9. Configure the new Winchester drive; refer to Section 1.3.1 of this guide. Assign an address (via the Drive Select switches) that differs from that assigned to the original drive. (Note: Jumpers W2 and W3 should be installed for a 35 MByte drive.)

10. Slide the new Winchester drive about half way into the empty bay within the Peripheral Chassis.

11. Connect the user-provided DC power cable between the new Winchester drive and the unused 9-pin Molex connector (J5) on the Peripheral Chassis power supply. Refer to Figures 4-1, 4-4, 4-7, 4-8, 4-10 and 4-13 in the *System 286/380 Hardware Maintenance Manual,* Order No. 134595, for a PRIAM Winchester drive cabling diagrams and connector-pin assignment listings.

12. The daisy-chain signal cable supplied with the Peripheral Chassis already has a spare connector for daisy-chaining one additional drive. Do the following:

   • First, plug the daisy-chain cable spare connector into J1 at the front of the additional Winchester drive. The red stripe on the cable should be at the top.

- Second, plug the daisy-chain end connector back into J1 of the original drive in the center bay. The red stripe on the cable should be at the top. (This drive is electrically farthest from the iSBC 215G, so the resistive terminator IC should remain here.)

If more drives are to be added, a user-supplied 50-pin ribbon cable (with mating connectors such as Spectra Strip 802-050-004 or Scotchflex 3425-0000) will have to be fabricated. (Total cable length should not exceed 12 feet!)

13. Slide the drives back into the Peripheral Chassis and secure each with 3 hold-down screws.

14. If so equipped, UNLOCK the shipping restraint on the Winchester drives.

15. Replace the covers and panels, reconnect the AC power and run the System 286/380 diagnostics to ensure the integrity of the Winchester drives.

2.3 Adding Diskette Drives

The existing diskette drive is installed in the right-most bay of the Peripheral Chassis and is assigned drive number 0. When installing a second diskette drive in the left-most bay, it must be configured as another device number. The procedure for installing an additional diskette drive is as follows:

1. Turn the AC power switch on the Peripheral Chassis to OFF.

2. Disconnect the AC power cord on the Peripheral Chassis from the power source.

3. Remove the top cover from the Peripheral Chassis.

4. Remove the front panel from the front of the chassis.

5. Remove the filler panels from the front of the chassis.

6. Remove the three screws securing the existing diskette drive to the chassis.

7. Slide the existing drive forward, to provide more working room in the rear of the Peripheral Chassis.

8. LOCK (if so equipped) the shipping restraint on the existing Winchester drive.

9. Remove the three screws securing the Winchester drive in the Peripheral Chassis, then slide the drive forward to provide easy access to the cables on the rear of the diskette drives.

10. Remove the resistive terminator IC installed at location 5E on the *original* diskette drive (refer to Figure 1-1 in this guide for an approximate location).

11. Ensure that a comparable resistive terminator IC is installed in the *new* diskette drive.

As mentioned in the introduction to this Chapter, the resistive terminator must be on the drive that is electrically farthest from the transmission line sources. Since the original drive is attached to the daisy-chain cable via a mid-point connector, the new drive, which will be attached to the end of the cable, becomes electrically farthest along the chain, and thus, the terminator must be on the new drive.

12. Configure the new diskette drive; refer to Section 1.2.1 of this guide. Assign an address (via the Drive Select jumper pairs) that differs from that assigned to the original drive.

13. Remove the additional drive mounting plate from inside the chassis and install it on the bottom of the new diskette drive.

14. Slide the new diskette drive about half way into the empty bay within the Peripheral Chassis.

15. Connect a user-provided DC power cable between the new diskette drive and the unused 9-pin Molex connector (J5) on the Peripheral power supply. Connect a user-provided, 3-pin, AC power cable between the new diskette drive and the terminal barrier strip (TB1). Refer to Figures 4-5 through 4-12 in the *System 286/380 Hardware Maintenance Manual,* Order No. 134595, for diskette drive cabling diagrams.

16. Plug the end of the daisy-chain cable into J1 of the new diskette drive. The red stripe on the cable should be on the bottom.

17. Slide all drives fully into the Peripheral Chassis and secure each with 3 hold-down screws.

18. UNLOCK (if so equipped) the shipping restraint on the Winchester drive.

19. Replace the covers and panels on the chassis, reconnect the AC power and run the System 286/380 diagnostics to ensure the integrity of the floppy drives.

Performance Specifications

Capacity	Single Density	Double Density
Unformatted		
Per Disk	800 kilobytes	1600 kilobytes
Per Surface	400 kilobytes	800 kilobytes
Per Track	5.2 kilobytes	10.4 kilobytes
IBM Format (128 byte sectors)		
Per Disk	500 kilobytes	1000 kilobytes
Per Surface	250 kilobytes	500 kilobytes
Per Track	3.3 kilobytes	6.66 kilobytes
Transfer Rate	250 Kbytes/Sec	500 Kbytes/Sec
Latency (Avg.)	83 mSec	83 mSec
Access Time		
Track to Track	3 mSec	3 mSec
Avg., with settling	91 mSec	91 mSec
Settling Time	15 mSec	15 mSec
Head Load Time	50 mSec	50 mSec

Functional Specifications

	Single Density	Double Density
Rotational Speed	360 RPM	360 RPM
Recording Density (inner track)	3408 BPI	6816 BPI
Flux Density	6816 FCI	6816 FCI
Track Density	48 TPI	48 TPI
Cylinders	77	77
Tracks	154	154
Heads	2	2
Physical Sectors		
SA850	0	0
Index	1	1
Encoding Method	FM	MFM/M^{2}FM
Media Requirements		
SA850	SA150/IBM Diskette 2D	SA150/IBM Diskette 2D
Alignment	SA122	SA122

Physical Specifications

	Operating	Shipping	Storage
Environment Limits			
Ambient Temperature	40°/115°F	−40°/144°F	−8°/117°F
Relative Humidity	20 to 80%	1 to 95%	1 to 95%
Maximum Wet Bulb	85°F	No condensation	

AC Power Requirements
50/60 Hz ± 0.5 Hz
100/115 VAC Installations = 85 to 127V @ 0.35A Max.
200/230 VAC Installations = 170 to 253V @ 0.25A Max.

DC Power Requirements
+24VDC ± 10% @ 1.0A Max.
+ 5VDC ± 5% @ 1.1A Max.

Heat Dissipation	Typical	Maximum
BTU/Hr.	200	245
Watts	60	72

Mechanical Dimensions (exclusive of front panel)

	SA850
Height	4.62 in. (117 mm)
Width	9.50 in. (241 mm)
Depth	14.25 in. (362 mm)

Reliability Specifications

MTBF	5000 POH (Power On Hours), heavy use
	8000 POH, typical use

MTTR	30 minutes

Component Life	15,000 POH

Error Rates:

Soft Read Errors	1 per 10^9 bits read
Hard Read Errors	1 per 10^{12} bits read
Seek Errors	1 per 10^6 seeks

Media Life

Passes per Track	3.5×10^6
Insertions	30,000 +

Power Requirements

+5VDC ± 0.25V @ 1.7A Max.

Environmental Requirements

Operation Temperature	0°C to 55°C (32°F to 131°F)
Relative Humidity	To 90% without condensation

Physical Characteristics

Width	8.0 cm (3.15 in.)
Length	19.1 cm (7.50 in.)
Height	1.4 cm (0.56 in.)
Weight	91.0 gm (3.20 oz.)

Functional Specifications

Capacity (Unformatted)	35 MB (70 MB[1])
Recording Density	6597 BPI
Track density	480 (960[1]) TPI
Cylinders	525 (1049[1])
R/W Heads	5
Bytes/sector	1024
Sectors/track	12
Bytes/track	13,440
Transfer rate	.806 Mbits/Sec
Access Times	
Track to track	10 mSec
Average	45 mSec
Maximum	90 mSec
Head Settling Time	8 mSec
Average Latency	8.34 mSec
Motor-on (spin-up) Time	30 Sec
Rotational speed	3600 RPM
Error Rates	
Soft error rate	1×10^{10} bits read
Hard error rate	1×10^{13} bits read
Seek error rate	1×10^{6} seeks

Environment Limits

	Operating	Non-operating
Ambient Temperature	15°C/35°C[2]	5°C/60°C
Relative Humidity	10 to 80%	1 to 95%
Maximum Wet Bulb	26°C	No condensation

Power Requirements

	Maximum	Typical
+24VDC ± 10%	5.0A	4.0A, seeking
		2.5, non-seeking
+ 5VDC ± 5%	2.0A	1.5A
− 5VDC ± 5%	2.0A	1.5A
−12VDC ± 5%	0.7A	0.4A

[1] Optional 70 MB Winchester Drive.

[2] For two-Winchester drive systems, the maximum temperature is 30° C.

Mechanical Dimensions

Height	4.62 in.
Width	8.55 in.
Depth	14.25 in.
Weight	20 pounds

Power Requirements

+5VDC ± 5% @ 3.35A maximum
−5VDC ± 5% @ 0.15A maximum

Environment Limits

Ambient Temperature	0°C to 55°C
Relative Humidity	Up to 90% noncondensing

Physical Characteristics

Width	17.2 cm (6.8 in.)
Length	30.5 cm (12.0 in.)
Height	1.3 cm (0.5 in.)
Weight	0.54 kg (19 oz.)

While using and configuring the System 286/380, you may find it useful to consult the following publications. These publications are available from:

Literature Department
Intel Corporation
3065 Bowers Avenue
Santa Clara, Ca. 950512

System 286/380 Publications Guide (Contains descriptions of related publications.) Order Number: 134587

System 286/300 Series Diagnostic Software User's Guide,[1] Order Number: 173767

System 286/380 Hardware Maintenance Manual, Order Number: 134595

Introduction to the System 286/380 Microcomputer, Order Number: 134588

System 286/380 Hardware Integration Guide, Order Number: 134590

System 286/380 Processor Configuration Guide, Order Number: 135033

System 286/380 Memory Configuration Guide, Order Number: 135034

System 286/380 Disk Configuration Guide, Order Number: 134594

System 286/380 Pocket Reference Guide, Order Number: 134596

Guide to Using the iSBC 286/10 Single Board Computer, Order Number: 146271

iSBC 028CX/056CX/012CX Ram Board Hardware Reference Manual, Order Number: 145158

iSBC 215G Winchester Disk Controller Hardware Reference Manual, Order Number: 144780

iSBX 218A Flexible Disk Controller Hardware Reference Manual, Order Number: 145911

iSBC 88/45 Advanced Data Communication Controller Hardware Reference Manual, Order Number: 143824

System 286/380 Communications Configuration Guide: iSBC 188/48, Order Number: 134593

iSBC 188/48 Hardware Reference Manual, Order Number: 146218

iSXM 100 XENIX Extension Module Installation Instructions, Order Number: 144778

iSBC 544 Intelligent Communications Controller Board Hardware Reference Manual, Order Number: 980616

iSXM 544A Addendum to the iSBC 544 Intelligent Communications Controller Board Hardware Reference Manual, Order Number: 134960

iSXM 953 Installation Guide, Order Number: 173076

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[1] Manuals 134589 and 173767 are shipped with the Processor Unit.

iSXM 544A Addendum to the iSXM 953 Installation Guide, Order Number: 134961

iSDM 286 System Debug Monitor Reference Manual, Order Number: 145804

EDIT Reference Manual, Order Number: 143587

iMMX 800 MULTIBUS Message Exchange Reference Manual, Order Number: 143875

Intel MULTIBUS Specification, Order Number: 980683

Intel iLBX BUS Specification, Order Number: 145695-A

iSBX Bus Specification, Order Number: 142686

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